



EPHEMERALS - March 2007

DATE	WHEN	WHAT & WHERE
1	7:30p	March Meeting @ TCC
3	6:00p	Kemps Landing Magnet School Eclipse Watch
9	Dusk	Skywatch @ Northwest River Park
10	Dusk	Girl Scouts #1 @ Northwest River Park
10	Dusk	Cloverwatch & @ Franklin Fairgrounds
17	2:00p	Girl Scouts #2 @ Camp Skimino
17	Dusk	Nightwatch @ Chippokes Plantation
24	7:00p	Men's Retreat Group @ Camp Silver Beach
31	Dusk	Garden Stars @ Norfolk Botanical Gardens

LOOKING UP

Hello fellow astronomers,

Is it cold or what? Dang, I went to Tampa for a star party and one night it hit 28 degrees. Set some kind of record, just my luck. I'll show a quick 5 min video at next meeting.

A lot coming up in the next few months, so check the calendar.

A total eclipse of the moon, Girls Scouts everywhere, Williamsburg and Planetarium visits, along with our nights out under the cold sky.

Speaking of planetariums, I will be at the VB planetarium on March 13th and 27th if anyone would like to join me. Big groups are expected, I'll be there at 7:30 PM, it usu-

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That's All Folks!

ally lasts about 45 minutes.

Watch on the 1st for a great view of the moon and Venus, side-by-side, eclipse on the 3rd, and the moon will be in the Teapot on the 13th early in the morning.

Make plans on observing the total Lunar eclipse from Kemps Landing Magnet School, 4722 Jericho Rd. North of Pembroke. They are expecting a record turnout for this event and it could surpass 200+ patrons. Needless to say, we will need to have 8 to 12 scopes.

The time will be 6 PM to 9 PM, and they would like us to show some items during totality till 9 PM (they have to shut down then). More later. See you at the meeting.

Dale Carey

THE BACK BAY AMATEUR ASTRONOMER'S OBSERVER

FEBRUARY'S MEETING MINUTES

The February meeting of the Back Bay Amateur Astronomers was called to order by Vice President Kevin Weiner on Thursday January 4th, 2007 at 7:30 PM at TCC in Virginia Beach. Dale Carey was absent because his wife was undergoing emergency gall bladder surgery and he just felt he ought to be there.

Members in Attendance: There were nineteen members in attendance which included: Neill Alford, Gerry Carver, Nick Depaulo, Jeff Dunn, Ted Forte, Steve Hamilton, Chuck Jagow, Georgie June, Ben Loyola, Matt McLaughlin, Mark Ost, Randy Paschal, Tom Pearson, Bill Powers, Mike Przytula, George Reynolds, Rob Schonk, Kevin Swann, Kevin Weiner. We also had six guests which included Diane Black and Anna Carter who are Girl Scout leaders who brought their girls Carly, Delani and Brianna and last but not least Dave Black.

Treasurer's Report: Barbara Weiner was also unavailable due to a medical procedure being done and her aptly capable hubby Kevin did a magnificent job of balancing all three hats during the course of the evening. While wearing the Treasurer's hat he reported that the club has \$5,361.88 in the treasury, with \$1,469.30 in the Scholarship fund leaving \$3,892.58 remaining for club operations.

Secretary's Report: Chuck Jagow reported membership was currently at 105 members with 43 members needing to pay their dues. December is the month that the majority of dues were due and some renewals have been trickling in and the friendly email reminders have been sent, a more direct reminder will be sent in a week or so.

Astronomical League Correspondent's Report: Amazingly, Georgie had nothing to say, we are just going to leave it at that.

Old Business: Ben Loyola spoke again of the efforts that have been expended to increase the exposure of the BBAA scholarship for this year and he has high hopes that the scholarship will be awarded.

He added that if anyone knows any college age students who could apply to please encourage them to do so.

New Business: We spoke with Girl Scout leaders Diane Black and Anna Carter at length about the Camp Skimino Girl Scout camp on March 17th. They requested that we show up early afternoon, perhaps two or three PM and set up for presentations in the available classrooms until darkness falls, and then provide telescope presentations. We will be allowed to spend the night, we can eat dinner with the Girl Scouts if we wish. It sounds like a win-win night.

Rapid Response Robotic Telescope Project Report:

Ted Forte provided an update that the observatory building is coming along nicely and that the schedule is still holding for the spring of this year. Ted encouraged everyone at the meeting to think about outreach opportunities with the local schools. We, the BBAA, would help the schools write the observing proposals, gather and assimilate the data if necessary.

Observer's Corner: Mark Ost and Georgie June talked about their brief encounter with Comet McNaught. Steve Hamilton detailed how he captured the very same comet on his digital camera out at Cornland one night before it disappeared below the horizon .

Miscellany: Chuck Jagow donated a few books to the club's library while his wife was absent from the meeting.

Presentation: Kevin Weiner demonstrated the DVD "ATLAS OF THE SKY" from Starry Night which was very informative. This DVD also included "THE MOONS OF THE SOLAR SYSTEM" and "THE EARTH'S MOON" also from Starry Night. Kevin also fielded quite a few Windows Vista questions afterwards.

In Conclusion: The meeting was adjourned early at 8:40 PM.

Chuck Jagow

THE BACK BAY AMATEUR ASTRONOMER'S OBSERVER



Even Solar Sails Need a Mast

by Patrick L. Barry

Like the explorers of centuries past who set sail for new lands, humans may someday sail across deep space to visit other stars. Only it won't be wind pushing their sails, but the slight pressure of sunlight.

Solar sails, as they're called, hold great promise for providing propulsion in space without the need for heavy propellant. But building a solar sail will be hard; to make the most of sunlight's tiny push, the sail must be as large as several football fields, yet weigh next to nothing. Creating a super-lightweight material for the sail itself is tricky enough, but how do you build a "mast" for that sail that's equally light and strong?

Enter SAILMAST, a program to build and test-fly a mast light enough for future solar sails. With support from NASA's In-Space Propulsion Program to mature the technology and perform ground demonstrator tests, SAILMAST's engineers were ready to produce a truss suitable for validation in space that's 40 meters (about 130 feet) long, yet weighs only 1.4 kilograms (about 3 pounds)!

In spite of its light weight, this truss is surprisingly rigid. "It's a revelation when people come in and actually play with one of the demo versions-it's like, whoa, this is really strong!" says Michael McEachen, principal investigator for SAILMAST at ATK Space

Systems in Goleta, California.

SAILMAST will fly aboard NASA's Space Technology 8 (ST8) mission, scheduled to launch in February 2009. The mission is part of NASA's New Millennium Program, which flight tests cutting-edge technologies so that they can be used reliably for future space exploration. While actually flying to nearby stars is probably decades away, solar sails may come in handy close to home. Engineers are eyeing this technology for "solar sentinels," spacecraft that orbit the Sun to provide early warning of solar flares.

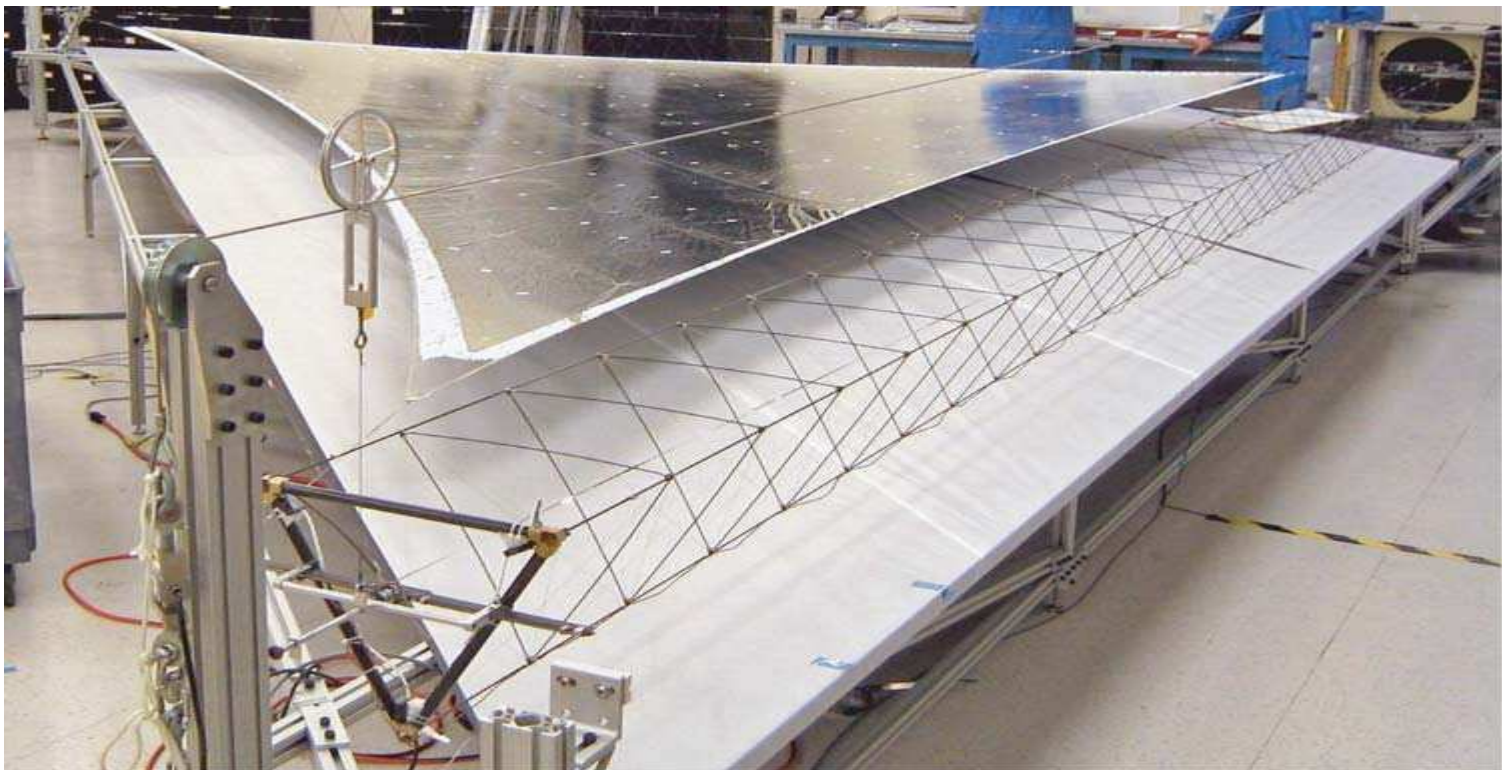
Once in space, ST8 will slowly deploy SAILMAST by uncoiling it. The truss consists of three very thin, 40-meter-long rods connected by short cross-members. The engineers used high-strength graphite for these structural members so that they could make them very thin and light.

The key question is how straight SAILMAST will be after it deploys in space. The smaller the curve of the mast the more load it can support. "That's really why we need to fly it in space, to see how straight it is when it's floating weightlessly," McEachen says.

It's an important step toward building a sail for the space-mariners of the future.

Find out more about SAILMAST at nmp.nasa.gov/st8. Kids can visit spaceplace.nasa.gov/en/kids/st8/sailmast to see how SAILMAST is like a Slinky toy in space.

SAILMAST is the thin triangular truss in front of the picture. It is attached to a section of a silver foil solar sail section shown here in a laboratory test. The mast in the picture is 2m (6 ft) long. The Space Technology 8 mission will test the SAILMAST, which is 20 times longer.



THE BACK BAY AMATEUR ASTRONOMER'S OBSERVER

B B A A I N F O

The BBAA meet the first Thursday of every month. While school is in session we meet at the VA Beach TCC campus in the Pungo building. Summer meetings are usually held at the Chesapeake COX campus. The March meeting will be on Thursday March 1st at 7:30 PM at the TCC campus in Virginia Beach.

BBAA INTERNET LINKS

BBAA WEB SITE

<http://groups.hamptonroads.com/bbaa/>

YAHOO GROUP

<http://groups.yahoo.com/group/backbayastro>

BBAA OBSERVER NEWSLETTER

<http://www.backbayastro.org/newsletters/newsletter.shtml>

WHERE IS THE MEETING?

TIDEWATER COMMUNITY COLLEGE CAMPUS

The TCC Campus is located in Virginia Beach off of Princess Anne road. The following should help you locate the campus.

FROM Interstate I-64:

Proceed to the I64 / I264 junction and take I264 East .
Take the S. Independence Exit, 17A, right hand lane
(.000000048134 AU).

Turn LEFT onto Princess Anne road
(.000000010322 AU).

Turn LEFT onto Community College Place
(.000000002131 AU).

At the Stop Sign turn right and follow the road around to the left and park in one of the parking lots.

The meeting is held in the Pungo Building which is on the right hand side of the pathway that splits the two major parking lots. The Astronomy classroom is in the far back right hand corner of the building.

COX COMMUNICATIONS CAMPUS

The COX Communications Campus is located in Chesapeake's Greenbrier section. The following should help you locate the facility.

FROM Interstate I-64:

Take exit 289B (between the Indian River & Battlefield exits).
South on Greenbrier Parkway (.7382 miles).
Turn RIGHT onto Eden Way West (.9231 miles).
Turn RIGHT on Crossways Blvd (.88901 miles).
Turn Right into the Cox Campus

The meeting is usually held in the Silver room located on the North side of the facility. Enter and tell the guard that you are with the BBAA and they will issue a badge and direct you to the room.

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What do you want to do?

OBSERVER INFO

The BBAA Observer is published monthly, the monochrome version is mailed to members who do not have Internet access. Members who do have Internet access can acquire the full color version on the Internet at:

<http://www.backbayastro.org/newsletters/newsletter.shtml>

Please submit articles and items of interest no later than the 16th of March for the April issue. Please submit all items to:

ObserverBBAA@cox.net / chuck@jagowds.com

OR

BBAA Observer
P.O. Box 9877
Virginia Beach, VA 23450-9877

PLANETARY NEBULAE

They are, perhaps, the most interesting and diverse class of object in the night sky! They exhibit the full range of brightness from ghostly wisps of barely detectable nebulosity to objects bright enough to be detected in the glare of city lights. More than any other object, they show true colors that are easily detectable in the eyepiece. There is the vivid blue of NGC 7662, the vibrant green of NGC 6572 and even the subtle pink of IC 418 with all the variations in between. They display an entire menagerie of shapes and sizes; rings, disks, rectangles, butterflies and hour-glasses, from stellar pinpoints to huge globes.

What are they? They are the last hurrah of a sun-like star nearing the end of its luminous lifespan; a highly evolved star that has expelled its outer layers of gas to expose its stellar core. The core, what astronomers term a "white dwarf," is the hottest type of star known, and its intense ultraviolet radiation excites the surrounding bubble of gas and dust until it glows, in much the same way that the gas in a fluorescent light glows making the wonderful objects that Sir William Herschel termed *planetary nebula*.

The Messier list contains four planetary nebulae, a ring (M57), two hourglass shapes (M27 and M76) and a disk (M97). Missing, oddly enough are objects that would best be described as typical of the genre such as NGC 1501, NGC 40, or NGC 2392, that manifest a strong central star surrounded by a seemingly spherical nebula.

The Astronomical League has an observing program dedicated entirely to planetary nebulae. New members may be surprised to learn that the BBAA created that program and that I am the coordinator. There are 110 objects on our list and two levels of award. Observing 60 objects earns you a certificate, and capturing all 110 entitles you to the planetary nebula pin which sports an image of M27 taken by BBAA member Richard Dickson. All the rules for the club can be found on the AL website and the list of objects can be found on both our HR.Com website and on back-

bayastro. It is not an easy program, to date only seven observers have completed the basic program (60 objects) and just three have earned the PNe pin! How many planetary nebulae have you observed?

There are two possessions that are nearly essential to the planetary nebula observer, the first you can buy and the second you must earn. What you can buy is a narrowband nebular filter such as Lumicon's OIII (oh-three) or Orion's Ulltrablock filter. These filters make many planetaries visible that are essentially invisible without the filter. PNe emit radiation in a very narrow range of wavelengths. The filters pass these wavelengths unabated while blocking most of the other light in the field of view. This enhances the contrast and makes the nebula stand out.

The other possession is the skill to employ these filters in a unique method we call *blinking*. By holding the filter between thumb and forefinger and passing it into and out of the light path between eyepiece and eye you can cause a stellar-sized planetary to appear to blink. The stars, including the PN's central star are dimmed by the filter, while the tiny nebula appears to brighten. As a result, one "star" appears to brighten while the others seemingly fade, revealing the planetary in the field. Whenever high magnification fails to differentiate the PN from the star field, blinking a filter will uncover it. Try it! You'll be amazed!

Ted Forte



The Eskimo Nebula NGC-2392
DSI-II LX200GPS10" cajagow

THE BACK BAY AMATEUR ASTRONOMER'S OBSERVER

Observer's Corner

This is the debut of the Observer's corner. I will kick it off with my report from January's session at Chippokes. Chippokes for January can be summed up in two phrases, sub-freezing & Great night!

The night started off with a spectacular crescent moon with Venus very close and a full moon present with Earthshine - worth the trip alone.

Up at Chippokes the cold was there, no doubt. However the wind stayed away, it was dead calm. Those who did enjoy the evening included Mike Pereira, Ron Repinski, Michelle Shinn, Dave Sanderson and myself.

Michelle and I embarked upon the Double Star club, she started a little rougher than I, as she left her object locator for her Orion at home. So she found the stars the good old fashioned way. Thanks to Dave, he helped me on my way finding the first couple of pairs. The skies were pretty good, I am kind of "green" on estimating their quality. We did have difficulty splitting Rigel at 125x and had to go as high as 167x and 250x and it was tough at that power the primary was dancing about like a full tick on a hot stove. So I would speculate that would indicate less than perfect skies.

Mike busied himself most of the evening with his fine dob finding Messiers while Ron worked his LX90 with his DSI cameras learning the finer points of guiding. Dave brought his scope but it stayed zipped up in its little bag while Dave searched for things with his binoculars and helped me.

The skies were very clear and the weather cool. The jet contrails were short when we first arrived. The seeing was good, but not excellent I would say. However by eleven twenty we noticed some suspiciously straight long straight "clouds" high overhead that must have been contrails indicating that the skies were filling with moisture.

I packed up and left around eleven thirty and my final temperature reading was 25.4 degrees. Oh! And last but not least, let's not forget to thank Michelle for the bi-gender brownies they were excellent!

Chuck Jagow

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A most unusual night. Started the night off with observing volcanic features on the moon. The Marius Hills cinder cones were well placed only a day or two away from full moon. This cinder cone field is unique on the lunar surface with numerous cones which are not to be confused with lunar domes. The crater Mersenius was observed and the domed floor of the crater showed well. This is an unusual crater with a floor that is arched upwards unlike most craters with flat or subsiding floors. The lunar domes Gruithuisen Delta and Gamma were well placed.

Temperatures moderated out from last night and observing was comfortable. Seeing was superb. I came back out at 10:30 to observe Saturn and was amazed by a strange layer of cirro stratus clouds which covered the coast only as far as over my house. The moon had a perfect moon bow with ethereal colors and an intense green ring. The entire back yard was bathed in an amber unreal glow almost daylight level. I was able to glimpse Saturn through a thin section of the cloud blanket and was amazed at the seeing. Absolutely rock steady. The air seemed to be suspended. The planet's rings were visible through the cloud cover. I wish it was clear. It would have been a legendary planet night if not for Saturn being swallowed up eventually by the cloud. Looking at the moon was as if looking down a tunnel. A meteor lit the sky around the moon completing a remarkable view.

Mark Ost, Feb-23-2007

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I took my scope out to Cornland Park last night for a couple hours.

I couldn't get out until after 8:00 and I knew that devil moon was coming up just before 10:00, but my scope was still in my truck from Friday night and I had a short list of things I wanted to see-M77 being at the top of my list. I'd read an interesting article in the November issue on galaxies in Astronomy Magazine and I realized that I hadn't found M77 in my scope yet.

The sky was holding steady as the sun went down and I just couldn't resist. I got out there to find the sky quite clear. I found M77 by using Delta Ceti as a pointer star. The galaxy appeared in my field of view (at 200x) as more stellar than I thought it would have. The center was small and very bright and there appeared near the galaxy a bright star, which at this point I think it was 84 Ceti, a 5.7 magnitude double star. The spiral arms of the galaxy didn't appear in my scope, only a small nebula-like glow around its central core.

I read up on the galaxy in Harvard Pennington's book, The Year-Round Messier Marathon Field Guide as I was there at the eyepiece. I was surprised to find that the galaxy is probably 60 million light-years away from us with a diameter of 100,000 light years. Pennington kept referring and comparing M77 to M74, in Pisces, another Messier galaxy that I'd not yet seen through my scope. Well I found that one on the map and looked and looked for it and then read the entry Pennington made for this galaxy. In his book, he gave the reader many promptings and suggestions on how to find it. I kept reading something between the lines: "This one's not going to be that easy to find!" and used Eta Pisces (Piscium?) as a pointer star and had to do a lot of scope wiggling to find it, but there it was after a bit of a struggle. I'm glad for the star near the galaxy because had it have been way out in the middle of nowhere, I probably wouldn't have found it. M74 appeared, at 9.4 magnitude but with a surface brightness of only 13.9 only as a faint, light patch of sky that improved with wiggling the scope, using low power, and averted vision.

After a short session of further stargazing, I found stars beginning to disappear in Perseus and realized the moon coming up through the trees in the back of the park. I trained my scope on the tips of the treetops and watched as a huge, blazing, perfect third-quarter moon floated into my field of view and then out again.

Rick Bish, Nov-13-2007

GIRL SCOUTS

We have two separate Girl Scout events this month that we have pledged support for. The first is on the 10th at the NWRP and will host 50-100 Girl Scouts from the area. Set up will be around 6:00 PM. A rain date of April 7th has been set for this event.

The Second event on the 17th is at Camp Skimino which is located North of Williamsburg. This is an extended event that will start at 2:00 PM. Camp Skimino will allow the participating BBAA members to spend the entire evening observing if they wish as this is prime "Messier Marathon" weekend. Camp Skimino will provide a place to conduct a presentation as well as some accommodations in the form of one cabin I believe. No rain date has been set for the second event.

The Girls Scouts at both events will be working toward earning their merit badges and learning general astronomy.

Ted Forte is the POC for the first event and Chuck Jagow is the POC for the 2nd event.

Chuck Jagow

EDITOR'S SOAP BOX

OK, it is my turn. Dale asked me what I would like to do to improve the newsletter. So I have given it a little bit of thought and have come up with a couple of things. The first is that the calendar on the rear page that no one really looks at needed to be changed. If it was going to take up so much darn room it should be useful. So instead of nice graphical little calendar like we have all been familiar with all of our lives, I have changed it to a form that may be more helpful. At least Joe Friday may think so as it has just the facts. I split it up into three columns one for BBAA, one for Outreach and one for Astronomical. In each column I will list the day of the month and the activity and as much amplifying information as I think is pertinent. We will see how it goes. If you folks like it we will keep it, if you don't we will "chuck" it, you know I really dislike that euphemism.

We also have some budding astro-imagers amongst our midst and they might like to see an image in "print" in an Imager's Corner. This includes everyone who has held their digital camera to the eyepiece and snapped a picture of the moon all the way up to the impressive works of Dickson, Rodgers, Hamilton & Blackie-well just to name a few of our accomplished imagers.

I would also like to have a section dedicated to just observing reports, sometimes we get some really great reports that are very entertaining to read on the Yahoo Internet site.

Maybe a column where folks can fess up and take responsibility for all the cloud cover by telling us what new stuff they have acquired?

I would like to do all of these things, but it takes participation by the members to sit down and write me a short article or observing report and send me an image or three.

It takes me almost an entire weekend to put this newsletter together as I have to hunt for material that is not copyright protected or waiting on permission to use copyrighted articles. Plus the actual layout. If I already have member authored material then it is only a matter of laying it out and that takes just a couple of hours.

So here is my plea (read this as begging) please send me suggestions observation reports, images, new stuff you may have acquired, anything and I will try to work it in. Believe me it is better to have to "pick" than to "scrounge"

Chuck Jagow

RRRT Outreach Progress

BBAA's campaign to spark interest in public school use of Norfolk State University's Rapid Response Robotic Telescope kicked off at the annual Tidewater Association of Science Educators (TASE) conference last fall. We had a display devoted to the project and were successful in engaging a number of educators in conversations about the project. We hope that our association with TASE will be of value in promoting the project in the future as well.

In January we made an effort to contact teachers to start advertising the project and explore the possibilities of public school use of the new observatory. We wrote letters to several key educators in the area, informing them of the potential benefits to their students and asking for endorsements of the project to include in a funding proposal to the National Science Foundation. Virginia Beach Planetarium Director, Chuck Dibbs, was very helpful in our efforts to reach teachers and administrators within Virginia Beach. Chuck arranged and hosted a meeting at the planetarium so that Dr. Salgado, Kevin, and I could pitch the idea to a few representative teachers and administrators. He followed that up by discussing the project with several key individuals in school administration and secured us an important endorsement from the Science and Math Academy. Chuck also helped us brainstorm some strategies and provided insight into the approval processes in Virginia Beach Schools.

We had very enthusiastic responses from Michelle Bailey Hennessey, Diana Scofield, and BBAA member Ron Shaneyfelt, all of whom teach astronomy at the Beach. Ron and Michelle both have agreed to help us spread project news and updates among the other astronomy and science teachers. The Mathematics and Science Academy at Ocean Lakes High School and the other Virginia Beach high school astronomy programs will likely be the biggest south-side beneficiaries of the observatory's outreach efforts. The academy in particular has expressed very serious interest. I have had very positive responses from the academy coordinator, Ms. Ann Zingraff-Newton, and the science department chair, Mr. Mark Clemente. Of course we are trying to reach out to the other area school systems as well.

Recently, NSU applied for a grant from the National Science Foundation for follow-on funding for both the science objective and the public outreach goals for the RRRT observatory. As part of that proposal, Kevin and I prepared a three page outline of outreach strategies to be employed by the BBAA. That paper is available on the backbayastro e-group (files section under Fan Mountain Telescope Project).

We currently have a number of volunteers who have committed to support the public outreach efforts of the RRRT. I would like to thank Kevin Weiner, Chuck Ripple, Georgie June, Bruce Bodner, Steve Hamilton, Larry Wade, and Matt McLaughlin for stepping up. I have also had assurances from other members that they will do what they can to help. If you are interested in working on the outreach for the project, please contact me. We need volunteers to visit schools, help teachers and students write proposals, and to facilitate the use of the telescope.

Ted Forte

MARCH 2007

BBAA	OUTREACH	ASTRONOMICAL
01 = BBAA Meeting @ TCC, 7:30 PM	03 = Kemps Landing Magnet School, 4722 Jericho Rd, VA. Beach. Dusk to 9:00 PM, Dale Carey POC, 200+ expected.	03 = FULL MOON
09 = SKYWATCH @ NWRP, Dusk		11 = LAST QUARTER
10 = CLOVERWATCH @ Franklin Fairgrounds, Dusk	10 = GIRL SCOUTS #1 @ NWRP, 6:30 PM, Ted Forte POC, 100+ Girls expected. The Girl Scouts will be working towards earning their merit badges.	
17 = NIGHTWATCH @ Chippokes State Park, Dusk	17 = GIRL SCOUTS #2 @ Camp Skimino which is North of Williamsburg, 2:00 PM, Chuck Jagow POC, 100+ Girls expected. Merit badges will also be worked upon.	18 = NEW MOON
	24 = Men's Retreat Group Presentation @ Camp Silver Beach on the Eastern Shore, 7:00 PM, Kevin Weiner POC.	
		25 = FIRST QUARTER
31 = GARDENSTARS @ The Norfolk Botanical Gardens, 7:00 PM		